

**ABSTRACT**

The present invention relates to an alkali metal generating agent and others for formation of a photo-cathode or a secondary-electron emitting surface capable of stably generating an alkali metal. The  
5 alkali metal generating agent is used in formation of a photo-cathode for emitting a photoelectron corresponding to incident light, or in formation of a secondary-electron emitting surface for emitting  
10 secondary electrons corresponding to an incident electron. Particularly, the alkali metal generating agent contains at least an oxidizer comprising at least one vanadate with an alkali metal ion as a counter cation, and a reducer for reducing the ion. An alkali  
15 metal generating device comprises at least the alkali metal generating agent and a case housing it, and the case is provided with a discharge port for discharging the vapor of the alkali metal.

(19) 世界知的所有権機関  
国際事務局(43) 国際公開日  
2004 年 8 月 5 日 (05.08.2004)

PCT

(10) 国際公開番号  
WO 2004/066339 A1(51) 国際特許分類<sup>7</sup>: H01J 9/12

(21) 国際出願番号: PCT/JP2004/000304

(22) 国際出願日: 2004 年 1 月 16 日 (16.01.2004)

(25) 国際出願の言語: 日本語

(26) 国際公開の言語: 日本語

(30) 優先権データ:  
特願2003-009927 2003 年 1 月 17 日 (17.01.2003) JP

(71) 出願人 (米国を除く全ての指定国について): 浜松ホトニクス株式会社 (HAMAMATSU PHOTONICS K.K.) [JP/JP]; 〒4358558 静岡県浜松市市野町1126番地の1 Shizuoka (JP).

(72) 発明者; および

(75) 発明者/出願人 (米国についてのみ): 渡辺 孝 (WATANABE, Takashi) [JP/JP]; 〒4358558 静岡県浜松市市野町

1126番地の1浜松ホトニクス株式会社内 Shizuoka (JP). 赤井 義朗 (AKAI, Yoshiro) [JP/JP]; 〒4358558 静岡県浜松市市野町1126番地の1浜松ホトニクス株式会社内 Shizuoka (JP). 酒井 四郎 (SAKAI, Shirou) [JP/JP]; 〒4358558 静岡県浜松市市野町1126番地の1浜松ホトニクス株式会社内 Shizuoka (JP).

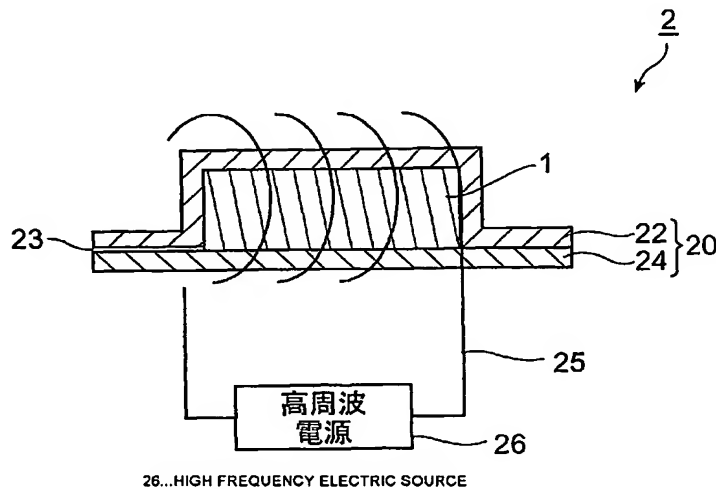
(74) 代理人: 長谷川 芳樹, 外 (HASEGAWA, Yoshiki et al.); 〒1040061 東京都中央区銀座一丁目10番6号銀座ファーストビル 創英国際特許法律事務所 Tokyo (JP).

(81) 指定国 (表示のない限り、全ての種類の国内保護が可能): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

[続葉有]

(54) Title: ALKALI METAL GENERATING AGENT, ALKALI METAL GENERATOR, PHOTOELECTRIC SURFACE, SECONDARY ELECTRON EMISSION SURFACE, ELECTRON TUBE, METHOD FOR MANUFACTURING PHOTOELECTRIC SURFACE, METHOD FOR MANUFACTURING SECONDARY ELECTRON EMISSION SURFACE, AND METHOD FOR MANUFACTURING ELECTRON TUBE

(54) 発明の名称: アルカリ金属発生剤、アルカリ金属発生器、光電面、二次電子放出面、電子管、光電面の製造方法、二次電子放出面の製造方法及び電子管の製造方法



26...HIGH FREQUENCY ELECTRIC SOURCE

(57) Abstract: An alkali metal generating agent (1) for use in forming a photoelectric surface emitting a photoelectron corresponding to an incident light or a secondary electron emission surface emitting a secondary electron corresponding to an incident electron, which comprises an oxidizing agent comprising at least one vanadate having an alkali metal ion as a counter cation and a reducing agent for reducing the above cation. The above metal generating agent (1), which includes a vanadate having weaker oxidizing power than that of a chromate, undergoes slower oxidation-reduction reaction, which results in easier reaction rate control as compared to a conventional technique using a chromate, leading to the generation of an alkali metal with good stability.

[続葉有]

WO 2004/066339 A1